Leisure Time Preferences of Student Veterans

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Abstract

Since the implementation of the post 9/11 GI Bill, college campuses have seen an increase in the number of student veterans on campus. This student population may have more difficulties than other students in adjusting to campus life, and often have combat-related physical and psychological injuries. Recreation activities have been shown to help improve psychological adjustment to civilian life, and possibly reduce PTSD symptoms, in the broader veteran population. The purpose of the current undergraduate honors thesis was to collect pilot data on leisure preferences of student veterans and investigate possible relationships between these preferences, PTSD symptoms, and perceived stigma. Student veteran participants filled out questionnaires about leisure time preferences, physical activity, PTSD symptomology, and stigma towards seeking psychological help. Results indicated that social and screen time activities played the biggest role in their leisure time. Of the leisure time activities, only sport participation was associated with lower PTSD symptomatology. Previous research has shown participating in sports to be beneficial for mental health, and current survey results are consistent with those findings and also further suggest that watching sports may also be beneficial for the mental health of student veterans.

Leisure Time Preferences of Student Veterans

In recent years, many veterans have been making the challenging transition to becoming college students after their time serving in the military, largely due to the post 9/11 GI Bill. As an educational incentive for more veterans and military members to pursue higher education, the bill is a program presented through the Department of Veterans Affairs (VA) that offers support for factors such as tuition, books, and housing for veterans perusing higher education (Borsari et al., 2017). In 2013, over 1 million veterans used educational benefits, including the GI Bill; this is double the number of veterans who were using educational benefits in 2008, the year before the bill's implementation (Department of Veterans Affairs, 2013). Student veterans often find the transition from service member to student as one of the most challenging adjustments from military life as they relearn study skills and try to connect with peers (Diramio, Ackerman, & Mitchell, 2008). Despite the high number of veterans and military members pursuing higher education and the interest that institutions demonstrate to help this population, there is little implementation and evaluation into what makes an effective program for these students (Borsari et al., 2017).

Recreation may be particularly helpful for veterans in adjusting to the social and psychological demands of transitioning back to civilian life. For example, research suggests that stigma and privacy concerns associated with receiving psychological treatment is a significant barrier to traditional treatment among veterans (Hoge, et al., 2004; Zinzow et al. 2012; Crawford et al., 2015). These stigma concerns may prevent student veterans from using more traditional student services offered on college campuses. The more positive- or "strengths-based" model of Therapeutic Recreation (TR), compared to traditional psychotherapies (Fenton et al., 2017;

Fenton et al., 2016; Hood & Carruthers, 2016) may therefore be more palatable to this population.

Despite the increased interest in providing these services, there is no prior research to date on the recreation and leisure preferences of student veteran populations. In addition, although there is a growing number of published studies on the impact of recreation on the mental health of veterans in general, much of this literature encompasses case studies, or intervention studies with very small numbers of participants and poor experimental control.

The primary purpose of the current study, therefore, is to collect pilot data on the leisure time preferences of student veterans. A secondary goal is to investigate possible relationships between these preferences, PTSD symptoms, and perceived stigma towards receiving psychological services. Finally, I will use these findings to make preliminary recommendations for recreation programs to serve student veterans, and to outline goals for future research.

Student Veteran Characteristics

Military service members and veterans are a unique part of the student population on college campuses across the United States. This population typically differs from the more traditional, fresh-out-of-high-school college student in several ways. Student veterans tend to be older than their more traditional civilian peers with only 20% between the ages of 17 and 23; as such, student veterans are also more likely to be married and have children (Walton-Radford, 2009 as cited in Borsari et al., 2017). Compared to peers without military involvement, student veterans traditionally have partaken in more risky health behaviors (i.e., substance use, violence, and risky sexual behaviors), have more combat related psychological symptoms and physical disabilities, and experience more personal and educational adjustment difficulties (i.e., inability to connect with peers and faculty on campus) (Barry, Whiteman, & MacDermid-Wadsworth,

2014; Borsari et al., 2017). Active duty students also run the risk for redeployment while in college which could lead to interruptions in education, loss of course work/credit, loss of scholarships, and reenrollment challenges once again (Borsari et al., 2017). Many college campuses have started identifying the needs of this unique population and have started implementing different programs for student veterans (Borsari et al., 2017). Borsari et al. (2017) highlight some of this special programing, including the establishment of student veteran organizations, student veteran-specific services (specialized tutoring/study groups for veterans), orientation classes, mentor programs, trainings for faculty and staff, engagement of veterans in on-campus health services, and intramural sports teams (Borsari et al., 2017). Though intramural sports play a beginning role in leisure activities, more leisure-based activities should be explored as an option for veteran specific programing at the college level to further help with the needs of the student veteran population.

Leisure and Recreation Benefits

Many veterans returning home from Operation Iraqi Freedom (OIF), Operation Enduring Freedom (OEF), and Operation New Dawn (OND) have developed both physical and psychological injuries including PTSD, amputation, traumatic brain injury (TBI), burns, visual impairments, self-inflicted injuries, drug abuse, and increased stress on family life (Van Puymbroeck & Lundberg, 2011). One potential treatment for both physically and psychologically disabled populations is the use of recreational activities as a form of therapy. Therapeutic Recreation uses recreation and other activity-based interventions as a form of recovery and therapy for those who are physically or psychologically disabled (The American Therapeutic Recreation Association, 2017). Recreation therapists can use specific interests of the veteran to improve function and ability, incorporate the family and the community to improve

the relationships with others, improve the quality of life, and enhance physical and cognitive abilities (Petersen, 2016).

Puymbroeck and Lundberg's (2011) review of five sport and nature based programs demonstrated three interventions (conceptual, qualitative, and quantitative) that address the role of therapeutic recreation to promote the health of veterans returning from recent war zones. Through their investigation, they found that nature based interventions, sport based programs, and community based health promotion programs can improve important constructs in the lives of veterans (Puymbroeck & Lundberg, 2011).

Nature Based Interventions. Nature based interventions are typically rooted in Attention Restoration Theory (Kaplan, 1995). In brief, this theory posits that natural settings have certain qualities (e.g., engaging attention "automatically"; making a person feel far away from the everyday) that help a person restore their cognitive and emotional fatigue. Most research on Attention Restoration Theory focuses on simply being in natural (vs. man-made) environments, rather than comparing how different activities in these environments may influence restoration. A few recent studies have used this framework to investigate whether nature-based experiences may help improve veterans' psychological well-being. For example, Devall and Kaplan (2014) investigated the impact of several different outdoor recreation programs that were part of the Sierra Club's Military Families and Veterans initiative. The programs varied in nature, but included participating in "backpacking, canoeing, whitewater rafting, and fly-fishing" (Deval & Kaplan, 2014, p. 688) over the course of several days in small groups. Most activities did not include a specific therapeutic component (e.g., formal therapy sessions), but did include social sharing with others. One week before the trip, participants filled out surveys of their perceived stress, attentional functioning, and positive and negative mood, as

well as loneliness and social connectedness, and overall life outlook. Participants filled scales again one week and 3-4 weeks after the trip. All measures except perceived stress improved at the one-week post-trip measurement. Some improvements continued to persist (though to a lesser, non-statistically significant degree) at the 3-4-week measurement.

A second, smaller study investigated the potential of a veteran's river running trip (floating down a river in a small water craft such as a paddle boat or kayak) as a therapeutic medium for PTSD without the need formal therapy or structured conversations around PTSD (Dustin, Bricker, Arave, Wall & Wendt, 2011). The University of Utah's Department of Parks, Recreation, and Tourism teamed up with the O.A.R.S river rafting company in Salt Lake City to sponsor the four-day river trip for a group of veterans. This pilot group included 13 veterans coping with PTSD accompanied by professional staff (therapeutic recreation specialists, psychologists, and social workers) for a total of 30 trip participants. The purpose for the pilot project was to generate research questions and record themes based on veterans' journal entries. Results from observations indicated that the river running trip reduced PTSD symptomology, enhanced coping skills, and offered a non-judgmental backdrop for exploring sensitive issues related to the trauma experienced by the veterans. The trip also provided a novel context for putting veterans' lives in perspective relative to their relationship to the larger world and provided a social context for veterans to experience camaraderie outside of clinical settings (Dustin et al., 2011).

Similarly, assessments of veteran participants six weeks after a fly fishing trip demonstrated that combat veterans with PTSD may benefit from participation in group-based outdoor recreation as a means to improve psychosocial well-being (Vella, Milligarr & Bennett, 2013). Participants included 74 veterans with PTSD diagnosis who participated in one of 19,

two-day fly-fishing retreats partnered with the Rivers of Recovery nonprofit organization in Utah. Participants acted as their own control through a repeated assessment measure for attentiveness, mood, depression, anxiety, and somatic stress between three time periods (two weeks before, last day of trip, and six weeks after trip). Between the baseline and other periods of assessment, comparisons showed significant improvements in sleep quality and reductions in perceptual stress and PTSD symptoms in the participating veterans. The results from this study further highlight that outdoor recreation is linked to significant improvements in psychosocial well-being (Vella et al., 2013).

Nature based interventions seem to suggest a positive experience for veterans' psychological well-being. However, it is important to note that the studies above were mostly pilot studies and lacked a control group. Also, the above studies involved group activities in a natural environment which is slightly different from the theme of Attention Restoration Theory where an individual is being purely submerged in a natural environment without specific activities or group-based participation. This makes it difficult to know if these effects were specifically due to the simple exposure to nature (Attention Restoration Theory), the activity, or the social interactions that caused the reported improvements in psychological well-being.

Sports and Physical Activity. A significant body of literature has examined the potential therapeutic benefits of physical activity and/or participating in sports for improved mental health. According to Caddick & Smith (2014), physical activity is simply the expenditure of energy in one of many different ways (e.g., running; dancing, etc.), whereas sport-based programs are both rule-bound and competitive. In their review of sport and/or physical activity based programs for veterans, Caddick & Smith (2014) emphasize that most of the studies they reviewed do not cleanly distinguish between these two types of activities.

Caddick and Smith (2014) found 11 prior studies that assessed the potential impact of sport and physical activity upon the subjective and psychological well-being of combat veterans in the aftermath of physical or psychological combat trauma. They found that these types of programs have several effects, including increasing determination and inner strength, helping veterans focus on ability and broadening of horizons, strengthening identity and self-concept, providing a sense of achievement, and improving social well-being. The authors also suggest that participating in sport and/or physical activity can also enhance motivation for living.

Caddick and Smith (2014) also suggest that there may be differences in the use of competitive sport and high intensity activities compared to therapeutic recreation activities depending on the type of disabilities a veteran demonstrates. In general, they found that the studies specifically targeting veterans diagnosed with PTSD chose 'non-competitive' activities such as fly-fishing, river-running, and aerobic exercise. Physically injured or disabled veterans were more likely to be involved in competitive or elite sport studies.

Since the publication of the 2014 review, at least two other studies have investigated the use of sports and/or physical activity in veterans. The first investigated a five-week surfing program that explored the retention and attendance rates of veteran participants who demonstrated PTSD symptomatology. This community based program included meeting for four hours, once a week, for five weeks. The program's itinerary consisted of two segments where the first portion of each session was dedicated to the active experiences of surfing and the second portion of each session held focused group discussions. The program included both a veteran and civilian volunteer participation. Veteran participants filled out questionnaires both before the program and upon program completion. Out of the 14 original participants, 11 completed the final program questionnaire. Clinically meaningful improvement in PTSD and depression

symptom severity was demonstrated in veterans who completed the program (Rogers, Mallinson, & Peppers, 2014).

The second study also, like Rogers et al. (2014), highlighted the use of sport and physical activity to improve PTSD symptomatology and connect social ties through the addition of including significant others (Bennett, Lundberg, Zabriskie & Eggett, 2014). Programs are often designed to incorporate a significant other or family members to improve stressors put both on the veteran and their family. Bennett et al. (2014) explored the effectiveness of an adaptive sports and recreation program developed by Sun Valley Adaptive Sports that was specifically designed for couples. The program consisted of two separate five-day tips (one trip for each experimental group) filled with skiing and snowboarding for three of the days and themed discussion activities each day of the trip. The study collected pretest and posttest data from two experimental groups and a control group that did not participate in the program. It is important to highlight that this study is one of the few studies that included a control group. Results of the study suggested that PTSD symptoms decreased in veterans and marital satisfaction increased for couples who participated in the program compared to couples who did not participate in the program (Bennett et al., 2014).

Community Health and Recreation Programs. Community Health Promotion Programs are typically defined as educational programs for communities that enhance the health and wellness of that community. Successful and beneficial community recreation programs are emphasized as “spaces where the person is not identified as a patient, is able to engage with supportive others, and has opportunities for participating in personally meaningful activities” (Sells et al., 2006 as cited in Fenton, et al. 2017, p. 3) For community-based health promotion programs, an article supplied by the National Recreation and Park Association suggested that

employing veterans as fitness instructors within community recreation agencies helps veterans develop leadership skills while providing community members with opportunities to improve their health (Collum, 2016).

A review of 35 empirical papers indicated that physical, social and creative community recreation can contribute to the recovery and social inclusion of individuals with mental health challenges (Fenton et al., 2017). Benefits associated with participants' community recreation experiences include six main themes: social connections, psychological improvements, physiological benefits, physical health, practical skills, and cognitive improvements (Fenton et al., 2017). Though Fenton et al. (2017) does not focus specifically to the veteran population, this review suggests that other, non- physical fitness activities (e.g, arts programs, etc.) might be useful for improving general mental health. One of the benefits of the current study is that all types of leisure activities, which include activities like the arts and intellectual activities, will be explored rather than assuming that veterans only prefer the outdoors and sports.

PTSD and Barriers to Treatment in Veterans

One of the potential benefits of using recreation and leisure time activities to address veterans' psychological health is that attending these programs may carry less stigma than traditional psychiatric or psychological care. Posttraumatic Stress Disorder (PTSD) is one of the leading disorders found in combat veterans returning from warzones. Combat experiences such as being shot at, handling dead bodies, knowing someone who was killed, or killing an enemy show a strong relation to the prevalence of PTSD (Hoge, Messer, McGurk, Cotting & Koffman, 2008).

The DSM-5 criteria (American Psychiatric Association, 2013) for diagnosis of PTSD start with exposure to a traumatic event (e.g. actual or threatened death, severe injury, or sexual

violence) with the presence of one or more intrusion symptoms (recurrent and involuntary memories or dreams of the event, flashbacks, psychological distress/reactions when exposed to cues that resemble the event). Other diagnostic criteria include avoidances of stimuli associated with the traumatic event, negative alterations in cognitions and mood associated with the traumatic event, and marked alterations in arousal and reactivity associated with the traumatic event (problems concentrating) all occurring for more than one month after the traumatic event.

To be diagnosed, these disturbances should cause notable distress in social or occupational areas in an individual's life and should not be the result of substance use or another medical condition. According to the DSM-5, prevalence rates are higher among veterans and other individuals in occupations that hold a higher risk of traumatic exposures (e.g., police or emergency medical personnel). The highest rates of prevalence (ranging from one-third to more than one-half of those exposed) are found in those exposed to highly traumatic experiences such as rape, genocide, or military combat and captivity (American Psychiatric Association, 2013).

Despite the high prevalence of PTSD among combat veterans, there are several barriers to veterans receiving proper care. These include both practical barriers and negative beliefs about mental health treatment and stigma (Zinzow, Britt, McFadden, Burnette & Gillispie, 2012). Practical barriers include things such as not having suitable transportation, not being able to get time off, and not having financial resources for treatment. The stigma associated with admitting psychological difficulties, however, appears to be a primary reason that persons in the military population do not seek help (Zinzow et al., 2012). According to Zinzow and colleagues (2012), a soldier may believe that other soldiers, including higher ranking commanders, might view he or she differently if they knew he or she were seeking treatment from a mental health professional.

Stigma associated with admitting a psychological problem is significantly higher compared to stigma associated with admitting a medical problem (Britt, 2000).

The Current Study

In summary, there is an increasing number of student veterans on college campuses. These students are more likely than other students to have difficulties adjusting to campus life, and often have combat-related psychological injuries. Recreation activities have been shown to help improve psychological adjustment to civilian life, and possibly to reduce PTSD symptoms, in the broader veteran population. Finally, stigma about receiving psychological treatment is a major treatment barrier for veterans with PTSD. There is, however, little research linking these findings.

For my honors thesis, therefore, I collected pilot data on the leisure preferences and physical activity levels of a self-selected sample of student veterans, both to inform future research and to help plan future programming for this population. In addition to filling out questionnaires about their leisure time and physical activity, participants filled out a measure of PTSD symptomatology and stigma towards seeking psychological help. The primary interest was in determining which types of leisure time activities student veterans were participating in the most. A secondary goal was to see if leisure time was related to either PTSD symptomatology or stigma.

Method

All procedures were approved by the Appalachian State IRB on March 24, 2017 (IRB #17-0216). See appendix A and B for approval letter and consent form.

Participants

Participants included 15 Appalachian State University undergraduate students (3 women, 11 men). Participants were contacted via email through the University's Student Veterans Services department at Appalachian State University. Participants were given the option to be redirected at the end of the survey to a link to enter their email address to receive a $5 Amazon Gift certificate as compensation for participation in the survey.

Materials

Participants filled out a series of questionnaires about leisure time activities (e.g., sports, religious activities, social activities, etc.), weekly physical activity participation, possible signs and symptoms of PTSD, feelings and attitudes about mental health, and demographic information.

Leisure-Time Interest Inventory. The Leisure-Time Interests Inventory was used to measure what participants' do in their leisure time (Hur, McGu & Iacono, 1996). It included nine activity themes (i.e. Intellectual Activities, Sports, Music and Artistic Activities, Handicrafts, Hunting and Outdoor Activates, Travel, Screen Time Activities, Dating and Social Activities, and Religious Activities) with 66 different activities in total. The Leisure-Time Interests Inventory was originally designed to measure the leisure preferences for adolescent males. A few alterations were made from the original inventory to fit the appropriate student veteran population. For example, a few of the activities in the Dating and Social Activities theme originally stated, "*getting acquainted with a pretty girl*," "*flirting a little*" and "*spending time with a special girl*." To better fit the social habits for an older college student with a neutral gender, I reworded the activities to state, "*Getting acquainted with someone (in a bar, Tinder, etc.),*" *Developing romantic relationships by going on dates*" and "*Spending time with a*

significant other." Due to some specific locations and experiences (i.e. going on a camera safari in Africa, Borneo, the desert or the Amazon basin), The Travel theme also received some alterations to incorporate some more general travel activities (i.e. visiting different foreign cities). See Appendix C to view the complete Leisure-Time Interests Inventory with all alterations. Participants rated the frequency of participating in an activity on a five-point rating scale (1 being "never" to 5 being "often as possible"). Scores for each of the nine subscales represent the average rating for each item. The reliabilities (Chronbach's Alpha) for each subscale in the current sample were .68 for Intellectual Activities, .92 for Sports, .42 for Arts, .78 for Handicrafts, .90 for Outdoors, .74 for Screen Time, .65 for Travel, and .87 for Religious Activities.

International Physical Activity Questionnaire. The International Physical Activity Questionnaires (IPAQ) comprises a set of 4 questionnaires. We used the short, last 7-day, self-administered format questionnaire to get an understanding of student veterans' general weekly physical activity (Craig et al., 2003). The short, last 7-day questionnaire is a 7-item measure asking about physical activity within the last seven days between vigorous and moderate exercise and walking and sitting. An example of a question is as follows: "*During the last 7 days, on how many days did you do vigorous physical activities like heaving lifting, digging, aerobics, or fast bicycling?*" Participants indicate how many days (0 to 7) they participate in each activity. If the number of days was 0 on a specific question, the participant was directed to the next type of activity. If the participant indicated a number of days greater than 0, then the participant was asked to estimate the time (in minutes) each day they participated in the activity. For IPAQ scoring, we used the "continuous" measure of estimated Metabolic Equivalents (METs) suggested by the measure's authors.

PTSD Checklist for the DSM-5 (PCL-5). We used the National Center for Posttraumatic Stress Disorder's 20 item PTSD checklist (PCL-5) to measure possible signs of PTSD in our sample (Weathers, Litz, Keane, Palmieri, Marx & Schnurr, 2013). The questionnaire consists of a list of symptoms that people face in response to a stressful experience. Participants were asked to indicate if they had been bothered by each symptom on a 5-point scale (0 being "not at all" to 4 being "extremely") within the past month of taking the questionnaire. Scores for each item are summed, resulting in a possible range of scores from 0-80. The reliability of this measure in the current sample (Chronbach's Alpha) was .94.

Stigma Scale for Receiving Psychological Help. The Stigma Scale for Receiving Psychological Help was used to measure student veteran perceptions of getting psychological help (Komiya, Good, & Sherrod, 2000). This was a 5-item questionnaire with an example as follows: "*It is a sign of personal weakness or inadequacy to see a psychologist for emotional or interpersonal problems*." Participants rated on a 3-point Likert scale from 0 being "strongly disagree" to 3 being "strongly agree," with higher scores indicating greater perception of stigma. Scores for each item are summed, resulting in a possible range of scores from 0-15. The reliability of this measure in the current sample (Chronbach's Alpha) was .85.

Demographic Questionnaire. Demographics included participants' age, gender, year in school, military branch served and years served in the military. Questions about if participants' parents graduated from college, what leisure time activity would participants like to participate in most during their college careers, and any additional resources that participants would like to see more on the participating campus were also added questions at the end of the survey.

Procedure

Participants were contacted via a monthly news email from the Appalachian State Student Veterans Services as an opportunity to participate in a survey for student veterans. A second email was sent the day before the survey closed as a reminder for veterans to participate. The email explained that there was a link to a survey, which aimed to explore student veterans' leisure time preferences as well as thoughts, feelings, and weekly physical activity. The email also explained that neither the Student Veteran Services nor the Student Veterans Association was sponsoring the survey but the anonymous, summarized results about veterans' leisure preferences would be shared with the campus services to help better incorporate student veterans' interests in future programming. The end of the email held the link to the online survey.

Participants were then redirected to the online survey where they first gave consent to participate. Participants were told that the goal of this study was to learn how student veterans like to spend their leisure time and whether there are links between leisure time activities and better mental health. It was also explained to participants that all information would be confidential and who to contact if there should be any questions. The survey consisted of questionnaires about leisure time activities (e.g., sports, religious activities, social activities, etc.), feelings and attitudes about mental health, and some demographic information. The survey took between 10-15 minutes to complete. Once a participant was done with the questionnaires, they were debriefed, informed about on-campus resources if they felt any discomfort during the survey, and thanked for their completion of the survey. If they wanted to receive compensation, they were redirected to a separate website where they entered their email address and received

their compensation once the survey was officially closed. Redirecting participants to enter their emails to receive compensation allowed participants to remain anonymous.

Results

Participant Characteristics

Regarding the branch of military participants served, one participant served in the Air Force, ten served in the Army, two served in the United States Marine Corps, and two served in the Navy, with an average of about five years (M = 4.97) served. Participants ranged in age from 21 to 50 (M = 26.93, SD = 6.93) years old. When participants were asked if either parent attended college, results were split down the middle between participants having at least one parent who attended college (n= 7) and those participants who had neither parent attend college (n= 8).

Leisure Time Preferences and Physical Activity

The average response for each of the nine activity themes on the Leisure Interests Inventory are shown in Table 1, ordered from most endorsed to least endorsed. To determine if there were significant differences in veterans' responses across the nine themes, I conducted a repeated-measures Analysis of Variance (ANOVA). This ANOVA did indicate that responses varied across the themes, $F(8,112) = 11.48$, $p < .001$, $\eta_p^2 = .45$. To determine where the differences were located, I conducted a set of contrast analyses comparing response to each activity to the activities just above and below it. This analysis indicated that the top two activities, Social and Screen Time, did not differ from each other, $F(1,14) = 0.59$, $p = .46$, $\eta_p^2 = .04$, but Screen Time was significantly higher than the next most endorsed activity, Travel, $F(1,14) = 7.9$, $p = .01$, $\eta_p^2 = .36$. Travel did not differ from Intellectual activities, $F(1,14) = 2.37$, $p = .14$, $\eta_p^2 = .14$, which did not differ from Sports, $F(1,14) = 3.36$, $p = .09$, $\eta_p^2 = .19$.

Differences between the remaining pairs of activities (Sports/Outdoors, Outdoors/Arts, Arts/Handicrafts, Handicrafts/Religious activities) were all statistically significant: $F(1,14) = 22.13$, $p < .001$, $\eta_p^2 = .61$ for Sports/Outdoors; $F(1,14) = 14.56$, $p = .002$, $\eta_p^2 = .51$ for Outdoors/Arts, $F(1,14) = 16.78$; $p = ..001$, $\eta_p^2 = .54$ for Arts/Handicrafts; and $F(1,14) = 44.66$, $p < .001$, $\eta_p^2 = .76$ for Handicrafts/Religious.

For the IPAC, scores ranged from 318 METS to 10,275 METS ($M = 2406.87$, $SD = 2415.50$. There was one outlier with extremely high numbers of physical activity reported (e.g., more than three standard deviations above the mean). With the outlier removed from the data, the range was from 318 METS to 4548 ($M = 1844.86$. $SD = 1086.83$). Interestingly, there was only a small-to-moderate, non-significant relationship between participants' scores on the "Sport" questions from the Leisure Interests Inventory and their IPAC scores: $r(13) = .03$, $p = .92$ with the outlier; $r(12) = .22$, $p = .83$, without the outlier.

Relationships between PTSD Symptoms, Stigma, Leisure Activities, and Physical Activity

Veteran's report of stigma levels generally were low ($M= 3.92$, $SD= 2.91$) and stigma did not seem to be related to any of the leisure time activities (see table 1). Veterans scores were more variable for the PCL-5 ($M = 23.36$, $SD = 15.68$). As may be seen in table 1, there was a large negative relationship between "Sport" scores on the Leisure Interests Inventory and scores on the PCL-5. In other words, people who scored high on sports interest reported fewer PTSD symptoms. It should be noted that because of the small sample size, none of the correlations reached traditional statistical significance levels ($p < .05$).

For IPAQ scores, there was no significant association with either stigma, $r(13) = .07$, $p = .81$, or PCL-5 scores, $r(12) = .28$, $p = .31$. When the IPAQ outlier was left out, physical activity

still did not show a significant relationship to stigma, $r(12) = .17$, $p = .56$., or PCL-5 scores, $r(11) = .07$, $p = .83$.

Discussion

The purpose of the current study was to collect pilot data on leisure preferences of student veterans and investigate possible relationships between these preferences, PTSD symptoms, and perceived stigma. This group of participants indicated that social and screen time activities played the biggest role in their leisure time. The next most common activities were travel, intellectual activities, and sports. Given the emphasis of prior interventions research with veteran populations, it was surprising that outdoor activities were among the least preferred activities. Of the leisure time activities, only Sport participation was associated with lower PTSD symptomatology. Finally, the sample overall reported high physical activity levels, which may be one of the reasons physical activity did not show strong associations to other variables.

Recommendations for Veteran Services

Results demonstrated that sport-related activities may be a beneficial way for student veterans to spend their leisure time, and could lead to some pathways for future research. As reviewed in the introduction, previous research has shown participating in sports to be beneficial for mental health, and current survey results are consistent with those findings. Participation in sport activity seems to be associated with positive outcomes for both student veteran population and the veteran population as a whole. One recommendation for Student Veterans Services, therefore, would be to implement intermural sports teams for their population and if that is already in place, continue to keep this integrated into the programming offered.

Of additional interest, the sports category on the leisure time preferences questionnaire also includes time spent watching sports. This suggests that spectator sports may be as important

for the student veteran population as participating in sports. Watching sports may include attending social gatherings and feelings of being connected to a college in general. Recommendations for programing could also involve group based attendance to school sports games such as football and baseball games.

One qualitative, open feedback question at the end of the survey asked veterans about any additional resources they would like to see on campus specifically. Most participants stated that no additional resources were needed or had no response. Those who did respond (n = 2) mentioned more veteran-specific health service providers such as a veteran specific counselor or doctor. Additional resources of this nature are important to note since engagement with health and wellness services was a recommendation made by Borsari et al. (2017) for Veterans Services on college campuses.

Previous studies often have chosen activates depending on the type of disabilities veterans demonstrate. Veterans diagnosed with PTSD have typically participated in research involving 'non-competitive' nature-based activities (Caddick & Smith, 2014). Though previous research has demonstrated lower PTSD symptomology after participation in these nature-based activities (Dustin et al., 2011; Vella et al., 2013), findings from this study show that sports-based interest and involvement may also be associated with of lower reports of PTSD symptomology.

Limitations

It is important to note that there were several limitations presented in this pilot study. First, out of the approximately 300 veterans on campus, the number of final participants was much lower than hoped (n = 15, or 5%). Based on conversations with the director of Student Veteran Services, this low participation rate is common in prior surveys they have conducted. This may be due to the fact that often, veterans tend to try to live life normally after their time in

the service, have taken many surveys while in the military, and are often subject to experimental work. A possible solution to this would be to have veterans take the Leisure Time Preferences survey at the beginning of the year during one of their first interactions with the Student Veterans Services on campus. This could be beneficial for all parties as they try to plan events for the upcoming year to base the types of activities around specific leisure preferences.

Another limitation was the self-selected participation of student veterans, which makes generalizability to a broader population difficult. One result of the self-selection may be the relatively low reported levels of perceived stigma in the sample, even though prior research has suggested that stigma is a major barrier veterans' mental health treatment. In the email advertisement for the study, the study was identified as a Psychology honors thesis. The particular set of individuals who responded may therefore have been more comfortable with psychological topics. Another possibility is that the student veteran population may be different from the overall veteran population due to the increased awareness of psychological topics on college campuses.

Conclusions and Future Research

In addition to some of the suggestions above, future studies should focus on empirically evaluating current or new programs as ways to expand the knowledge of potential benefits for this population. For example, a study could evaluate the participation of student veteran's groups attending school sporting events. Research could explore a pre-test, post-test intervention of a group of student veterans attending sporting events and compare participants' overall well-being and PTSD symptomology to a control group who did not attend the sporting events. This is just one potential route as more interest takes hold on this population. As research has demonstrated, student veterans, like the general veteran population, want to feel a connection to their new

civilian life as they make the transition form service member to student. Leisure time activities are a potential path to make veterans more comfortable with their student identity, connect them to others and to their school, as well as being a potential therapeutic factor to their overall well-being.

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Table 1.

Leisure Time Interests and Their Correlation with PTSD Symptoms and Stigma

			Correlation with:	
Leisure-Time Activity	*M*	*SD*	PCL-5	Stigma
Social	3.26	0.84	0.08	0.00
Screen Time	3.02	0.96	-0.05	0.18
Travel	2.68	0.71	0.11	-0.03
Intellectual	2.65	0.51	-0.07	-0.04
Sports	2.41	1.03	-0.52*	0.12
Outdoors	2.06	0.82	0.01	-0.08
Arts	1.96	0.57	0.20	0.13
Handicrafts	1.91	0.69	0.35	-0.21
Religious	1.28	0.55	-0.23	0.18

Note. *$p < .10$. The PCL-5 is the PTSD Checklist for DMS-5 (Department of Veterans Affairs, 2013). Stigma is the Stigma Scale for Receiving Psychological Help (Komya, Good, & Sherrod, 2000).

Appendix A

To: Heather Edwards
Psychology
CAMPUS EMAIL

From: Lisa Curtin, PhD, IRB Chairperson
Date: 3/24/2017
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Agrants #:
Grant Title:

STUDY #: 17-0216
STUDY TITLE: Recreation Preferences of Student Veterans
Submission Type: Initial
Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Approval Date: 3/24/2017
Expiration Date of Approval: 3/23/2018

The Institutional Review Board (IRB) approved this study for the period indicated above. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

Regulatory and other findings:

The IRB determined that this study involves minimal risk to participants.

This research meets criteria for a waiver of written (signed) consent according to 45 CFR 46.117(c)(2).

The IRB waived the requirement to obtain a signed consent form for some or all subjects because the only record linking the subject and research would be the consent document and the principal risk would be potential harm resulting from a breach of confidentiality. Each subject will be asked whether the subject wants documentation linking the subject with the research, and the subject's wishes will govern.

All approved documents for this study, including consent forms, can be accessed by logging into IRBIS. Use the following directions to access approved study documents.

1. Log into IRBIS
2. Click "Home" on the top toolbar
3. Click "My Studies" under the heading "All My Studies"
4. Click on the IRB number for the study you wish to access
5. Click on the reference ID for your submission
6. Click "Attachments" on the left-hand side toolbar
7. Click on the appropriate documents you wish to download

Approval Conditions:

Appalachian State University Policies: All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB approved protocol, and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

Approval Expiration and Continuing Review: The PI is responsible for requesting continuing review in a timely manner and receiving continuing approval for the duration of the research with human participants. Lapses in approval should be avoided to protect the welfare of enrolled participants. If approval expires, all research activities with human participants must cease.

Prompt Reporting of Events: Unanticipated Problems involving risks to participants or others; serious or continuing noncompliance with IRBrequirements and determinations; and suspension or termination of IRBapproval by an external entity, must be promptly reported to the IRB.

Closing a study: When research procedures with human subjects are completed, please log into our system at https://appstate.myresearchonline.org/irb/index_auth.cfm and complete the Request for Closure of IRB review form.

Websites:

1. PI responsibilities: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf

2. IRB forms: http://researchprotections.appstate.edu/human-subjects/irb-forms

CC:
Lisa Emery, Psychology

Appendix B

Consent to Participate in Research

Information to Consider About this Research

Recreation Preferences of Student Veterans

Principal Investigator: Heather Edwards

Department: Psychology

Contact Information: 828-404-8851; edwardshm@appstate.edu

Faculty Adviser: Lisa Emery, Ph.D.

Department: Psychology

Contact Information: 828-262-2272, ext. 416; emerylj@appstate.edu

You are being invited to take part in a research study about the *recreation preferences* and habits of student veterans. If you take part in this study, you will be one of about *100* people to do so. By doing this study we hope to learn *how student veterans like to spend their leisure time, and whether there are links between leisure time activities and better mental health.*

The research procedures will be conducted online using Qualtrics survey software.

You will be asked to *fill out questionnaires about your leisure time activities (e.g., sports, religious activities, social activities, etc.), your feelings and attitudes about mental health, and some demographic information. This should take approximately 10 to 15 minutes.*

You cannot volunteer for this study if are under 18 years of age.

What are possible harms or discomforts that I might experience during the research?

To the best of our knowledge, the risk of harm for participating in this research study is no more than you would experience in everyday life. You may not be comfortable answering questions about mental health and stigma perceptions; you are permitted to skip questions you do not wish to answer.

What are the possible benefits of this research?

A better understanding of how leisure preferences might influence mental health may lead to new interventions and preventative techniques for improving the lives of veterans and active duty military personnel. In addition, we will share the anonymous, summarized results of the leisure preferences questionnaire with Appalachian's Student Veteran Services to assist in the development of future programming.

Will I be paid for taking part in the research?

We *will* pay you for the time you volunteer while being in this study. At the end of the series of questionnaires, you will be re-directed to another site to enter your email address. At the end of data collection for the study (approximately a week after the initial recruitment email), we will send a $5 Amazon gift certificate to the email address you entered as compensation for participation.

How will you keep my private information confidential?

The survey itself does not ask for any identifying information, and your survey responses will not be linked to the name and email address that you provide. We will delete the list of names and email addresses one month after we send the compensation. Your anonymous survey questions will be kept indefinitely.

Who can I contact if I have questions?

The people conducting this study will be available to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator at 828-404-8851, *or the Faculty Adviser at 828-262-2272, ext. 416.* If you have questions about your rights as someone taking part in research, contact the Appalachian Institutional Review Board Administrator at 828-262-2692 (days), through email at irb@appstate.edu or at Appalachian State University, Office of Research and Sponsored Programs, IRB Administrator, Boone, NC 28608.

Do I have to participate? What else should I know?

Your participation in this research is completely voluntary. If you choose not to volunteer, there will be no penalty and you will not lose any benefits or rights you would normally have. If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. There will be no penalty and no loss of benefits or rights if you decide at any time to stop participating in the study.

By continuing on to the survey, you acknowledge you have read and agree to the descriptions and terms outlined in this consent form, and voluntarily agree to participate in this research.

This research project has been approved by the Institutional Review Board (IRB) at Appalachian State University.

This study was approved on: March 24, 2017

This approval will expire on March 23, 2018 unless the IRB renews the approval of this research.

Appendix C

Leisure-Time Interest Inventory Themes.

Intellectual Activities

Reading current novels.
Reading history, philosophy, biographies, economics, etc.
Reading or re-reading literary classics.
Reading books or magazines on science.
Reading science fiction.
Learning about some subject that interests you like science, history, politics, etc.
Spending some time at the library.
Reading mystery or detective novels.
Keeping on current events, poetical and other issues of the day.
Attending lectures on topics of interest.
Watching news and public affairs programs on TV.

Sports

Playing team sports (softball, football, basketball, etc.).
Playing touch or tackle football, practicing passing, kicking, etc.
Attending sporting events (ballgames, races, hockey, etc.).
Playing basketball, pitch and catch, hitting fly balls, etc.
Watching TV sports.
Being in competitions (races, contests, tournaments, shows, etc.)
'Shooting hoops' or playing basketball with friends.
Ice skating or playing ice hockey.
'Pumping iron', muscle-building at a gym.
Jogging or running for exercise.

Music and Artistic Activities

Attending live theater or musicals.
Making music (playing an instrument, singing, composing).
Participating in amateur theater, music, or dance groups.
Listening to 'serious' music (records or 'live' performances).
Creative art work (sculpting, potting, print-making, etc.).
Painting, drawing or sketching.

Handicrafts

Rebuilding, repairing things (furniture, clothes, cars, machines, etc.).
Making things (furniture, clothes, toys, electronic devices, baked goods, etc.).
Model building or craft work.
Building a workshop, darkroom, green house, etc.
Inventing things, a new or improved device, method, idea.

Hunting and Outdoor Activities

Hunting big game.
Hunting ducks or other game birds.
Hunting small game, rabbits, squirrels, etc.
Target shooting, trap shooting or archery.
Working in the woods with friends. Trail maintenance, building structures, chopping wood, etc.
Back-packing, hiking, camping.
Going fishing. (freshwater, saltwater, fly fishing)
Riding trail bikes, snowmobiles or similar off-the-road vehicles.
Wild-life study, bird watching, etc.
Motorcycle riding with friends.

Travel

Visiting different cities in the United States.
Visiting different foreign cities.
Traveling by train or car for an extended length of time.
Traveling around the country in a camper or mobile home.

Screen Time/ TV Viewing

Playing video or computer games.
Watching a movie.
Watching TV adventure or comedy programs.
Binge watching a TV series on Netflix, Hulu, etc.

Dating and Social Activities

Getting acquainted with someone (In a bar, Tinder, etc.)
Developing romantic relationships by going on dates.
Getting together with friends, partying, etc.
Spending time with a significant other.
Doing something exciting, even slightly dangerous.
Maintaining your looks, dress, physical appearance.
Making money.
Shopping for new clothes, records, furniture or whatever interests you.
Having discussions with friends.
Joy-riding in a car.

Religious Activities

Listening to religious music (oratorios, hymns, spirituals, etc.)
Activities sponsored by your church or synagogue.
Attending religious services.
Watching religious programs on TV.